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America.

The Hudson Bay company last autumn completed a steamer for the lower part of the Mackenzie River. Trial trips were made on Great Slave Lake, and next summer she will run to Peel River, near the mouth of the Mackenzie.

The Geographical society of the Pacific at San Francisco announces the recognition of the new monthly journal *Kosmos*, edited by C. Mitchell Grant, as its official organ. The new periodical will give reports on the meetings of the society. Though its plan includes all branches of science, the first number is largely devoted to geography. We find in it a description of the ascent of Mount St. Elias by H. W. Seton-Karr, and a paper by Prof. George Davidson on 'Submarine valleys on the Pacific coast of the United States.' The resuming of publications by the geographical societies of San Francisco and Mexico shows that interest in geography is increasing in America.

Polar regions.

Mr. Alexander McArthur, formerly an employee of the Hudson Bay company, left Winnipeg, Feb. 13, on an exploring expedition to the polar regions. He intends to go from Winnipeg to Fort Churchill, and to continue his journey along the west coast of Hudson Bay. While Gilder proposes to push north by the way of Fury and Hecla Strait, McArthur prefers to go north-west by the way of King William Land and Boothia Felix, the ill-famed districts of Ross's sufferings in 1829-33, and of the loss of the Franklin expedition. He intends to stay a winter on King William Land, and to go north in the ensuing winter, crossing Lancaster Sound, and following the west coast of North Devon. From there he proposes to cross to the little-known islands of Jones Sound and thus reach the west shore of Grinnell Land, which, he hopes, will prove a safe route north. He expects to be absent some three or four years. This plan of reaching the north pole will undoubtedly be as unsuccessful as Gilder's. Gilder has ample experience in arctic travelling, and consequently does not attempt a route that is even unknown to the Eskimos. The way he intends to go is inhabited by natives, and, under favorable circumstances, he may have a chance to reach Lancaster Sound in the spring of 1889. Whether he will be able to cross Lancaster Sound is doubtful. The Eskimos travel very rarely across this strait, and the journey can be accomplished only in favorable years when it is frozen over, which does not occur often. As steam-whalers go every year to Smith Sound and Pond's Bay, Gilder's plan cannot be considered a good one, though he might do considerable geographical and ethnological

work between Fury and Hecla Strait and Pond's Bay. He will have the greatest difficulty in getting Eskimos to go along with him across Lancaster Sound. Food is very scarce on this journey, and many stories of the natives referring to families crossing Lancaster Sound are full of the horrors of starvation and cannibalism. The natives of Cape Isabella are said to be comparatively well off, and these are the only ones who can help an explorer along. We cannot see any reason why a traveller who intends to explore the extreme north should not start from the nearest available point instead of wasting his time and strength on a hazardous journey for which there is no necessity. Mr. McArthur may succeed in reaching King William Land, as there exist two or three routes to that country which are used by the natives, — one from Chesterfield Inlet, another from Wager River, and a third along the coast of the Gulf of Boothia. Rae and Hall used the last, and Schwatka the second route. As, however, the Eskimos of King William Land and Boothia do not travel farther north than Bellot Strait, and since 1833 do not even visit this part of the coast, and as they are not at all acquainted with the more northern parts of the Arctic Archipelago, there is not the slightest chance for McArthur to get along on this route. Explorers like McArthur and Gilder may accomplish considerable and valuable work when they confine themselves to a task adequate to their means and the strength of a single man, but the accomplishment of their plans is almost impossible. The exploration of Jones Sound is one of the most important problems of the geography of arctic America, and it may be accomplished by a few men at a small expense. Gilder is a man of extensive experience in travelling in the Arctic, and we may be allowed to express the wish that he should give up his present plan and apply his energies and skill to this important work which he will be able to accomplish.

NOTES AND NEWS.

NOT long ago Nicolaier, working in Flügge's laboratory, found a bacillus which had the power to produce in animals the phenomena of lock-jaw (*tetanus traumaticus*). Afterward Rosenbach succeeded in obtaining the same bacillus from the wound of a man who had died of lock-jaw. L. Brieger has recently prepared from flesh a ptomaine which produces in animals the same symptoms as those which are produced by injecting the specific tetanus bacillus. To the substance he gives the name 'tetanine.' He has, further, found the same substance in human cadaver which had

for several months been undergoing spontaneous decomposition. Tetanine is a definite chemical compound which can be purified by the usual chemical methods, and was so purified by the discoverer. Brieger also found in tetanus-cultures another ptomaine which has the power to produce cramps and other symptoms closely resembling those of lock-jaw. The finding of the tetanus-bacillus and of tetanine suggests an explanation of certain facts which have been known for some time. In some localities persons with wounds are particularly liable to lock-jaw. In one such locality, at least, large areas of land are covered for a part of the year with the refuse from fish-oil factories. It seems not improbable that in the decomposition of the fish the ptomaine described by Brieger may be formed, and that as the matter dries it may find its way into the air to some extent; or it may be present in the earth, and contact with the earth may cause its introduction into a wound.

—One of the most valuable contributions to science now in course of preparation is a series of charts showing the surface temperatures of the Atlantic coast waters from the eastern coast of Maine to the extreme southerly coast of Florida. This important work is being prosecuted by the U. S. fish commission, with the aid of the lighthouse board and the signal service, and is based upon observations made thus far at twenty-four lighthouse stations, showing the surface temperatures at these localities during the past five years. The temperatures at each station are shown in detail for each year by ten-day means, and these results are combined with a series of isothermal charts showing the relations of the different stations. These observations have a most important bearing on the study of the migration of the mackerel, menhaden, shad, and other migratory fishes, and will be of great value. Other temperature observations of the inland waters of the United States are now in course of reduction, and will shortly be issued.

—The prevalent belief that an Indian bears pain with perfect composure is likely to be overthrown by the observations of Dr. Corbusier among the Apache Indians. He finds that they do not endure physical pain any better than, if as well as, the whites. Great pain renders them stupid, and the stolidity with which they are supposed to bear pain is not well maintained by them under small surgical operations, even the extraction of a tooth almost always eliciting a groan or a yell. The paint which is usually on their faces conceals their expression. When this is removed, the changes induced by the emotions may be readily

detected: anger is almost always betrayed by the expression of the eyes, fear by the dirty grayish color the skin assumes, surprise by suddenly drawing in a breath as if gasping, and sometimes by covering the mouth with one hand.

—The Linnaean society of New York have passed resolutions asking congress to make adequate laws for the preservation of the native animals, forests, and the many objects of wonder and scientific interest contained in the Yellowstone national park. The resolutions were presented in both houses of congress on Monday last.

—The desire has been frequently expressed for an American journal devoted to the interests of agricultural science, and several unsuccessful efforts have been made to establish one, but the modest journal under the title of *Agricultural science* (Charles S. Plumb, Geneva, N.Y.), whose first two numbers lie before us, is, we believe, the first of them which has proved viable. The purposes of the new journal, as stated by the editor, may be summarized as, first, the publication of original work in agricultural science; second, the publication of abstracts of articles in foreign journals; third, to furnish a means of communication for students and investigators in this line. In the numbers before us the two latter aims of the journal are more amply fulfilled than the first. The abstracts are well selected and prepared, and not a little news of interest is presented. The original articles are five in number, and take up twenty-one out of forty-eight pages, but only three of them contain the record of any original work, and the main points of one of these have been previously published, so that we have in the two numbers eight pages of fresh, original investigation. This fact seems to us to show plainly one of the chief difficulties likely to beset the editor, viz., a paucity of original investigations. The amount of original scientific work performed at the various agricultural colleges and experiment stations is not large, and considerable of what is done seems likely to find its final and only means of publication in annual reports and the like. At the same time, we wish the new journal all possible success. The attempt is certainly a most laudable one, and the execution thus far praiseworthy. Whether the two obstacles of paucity of material and a necessarily somewhat limited number of readers can be overcome, time must show.

—The publication agency of the Johns Hopkins university has now ready for issue vol. i. of a series of selected morphological monographs by members of the university, under the editorial direction of W. K. Brooks, Ph.D. The volume contains three hundred and seventy pages and

fifty-one plates, quarto. The contents are, 'Lucifer: a study in morphology,' with eleven plates, by W. K. Brooks; 'The development of Renilla,' with sixteen plates, by E. B. Wilson; 'The life-history of the Hydro-Medusae: a discussion of the origin of the Medusae, and of the significance of metagenesis,' with eight plates, by W. K. Brooks; 'Report on the Stomatopoda,' with sixteen plates, by W. K. Brooks. Only one hundred copies in all will be issued. The price is fixed at seven dollars and fifty cents net, delivered by mail, postage paid, or by express at the expense of the purchaser.

—The Smithsonian institution has received notice from Col. J. H. Wood of St. Paul that he has shipped to them the bodies of five persons—a man, woman, and three children—taken from a cave in the Bad Lands of Dakota by a miner. The bodies are simply dried up, and are not petrified, but are in a remarkable state of preservation. Scientific men who have seen them say they belong to a race which existed two thousand years ago. This will be a very important addition to the collection of desiccated bodies now on exhibition in the national museum.

—Dr. Baker, secretary of the Michigan state board of health, has found that in that state small-pox has been comparatively epidemic every five years. In 1872 there were 302 deaths from that disease, in 1877 there were 102, and in 1882 there were 100. He looks for its appearance in the state again this year.

—The statement is made that supernumerary toes and fingers are very often met with among the negro tribes living beyond the Orange Free State. Dr. Stockly mentions the case of a Caffre, eighteen years old, who had six fingers on each hand. His father, mother, four sisters, and a brother had the same. His mother had also a double series of toes on both feet.

—The January meeting of the Michigan state board of health was especially noteworthy by reason of a report of a special committee which had been appointed to confer with the regents of the university relative to the establishment of a laboratory of biology and hygiene at that institution. As a result of the agitation of the subject, the legislature of the state has been memorialized to establish such a laboratory.

—An unnamed fever is said to be very prevalent in Jerusalem, the patients being so numerous as to fill a large hospital camp. As quinine is said to be greatly in demand, we presume the fever is of malarial origin. It is thought that the spread of the disease is due largely to polluted drinking-water and unwholesome food.

—Reference was made in a recent number of *Science* to the deaths which occurred in January of the present year in the city of Troy, N. Y., from the inhalation of fuel-gas. The *Medical news* contains a history of these cases from the pen of Dr. Bontecau, who assisted at the autopsies held on the victims, and attended others who recovered. The occupants of a row of dwellings were almost all seriously overcome by the gas. When the cause was discovered, the police aroused those who lived in these houses, many of whom were found sick. All the occupants of one flat were dead. At the autopsies the solid tissues and the blood were found to be of a cherry-red color, which is characteristic of poisoning by carbonic oxide. The composition of the fuel-gas which was used in these houses is said to be, hydrogen 56, and carbonic oxide 44, parts in 100.

LETTERS TO THE EDITOR.

*.*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

On certain electrical phenomena.

IN *Science* of Feb. 18, Dr. Shufeldt relates some interesting instances of accidental electrification. He seems to imply, in his description of the phenomena, that there is something mysterious or unusual in such occurrences. If he will critically examine his facts, possibly eliminating a few of them, I think he will find nothing which is not easily accounted for, and which has not been long recognized. I have amused myself and many of my friends with this sort of thing for many years. The electrification of a man or a woman in moving about a room is a phenomenon in which the individual is not to be counted, as it depends entirely on the conditions existing at the time. Everybody is 'susceptible' if the conditions are favorable. As Dr. Shufeldt states that he had never observed such exhibitions in Washington, I may remark that in two different houses in which I lived in that city I observed them on innumerable occasions. In one of these I arranged a couple of bent wires in such a way that the spark passed between them directly over the opening of a gas-burner, and for several weeks matches were a useless luxury. In another house that I know of, dancing-parties were especially gotten up by the young people, that they might be amused by the passage of the spark in touching hands. In the latter instance the phenomenon was strongly marked during nearly all of a continuously cold winter. During the present winter, in the house which I now occupy, accidental electrification has several times reached such a point as to be positively disagreeable. In moving across a room to turn a water-faucet, or to touch a poker or any other fairly good 'ground,' a long spark and an uncomfortably strong shock would result. But this was confined to no person or persons; any one who happened in was affected in the same way, provided the conditions were equally favorable.

The necessary conditions are simply those which are required for the successful performance of any